

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~An electro-optical device,~~ An organic electroluminescent display comprising:

- ~~———— a plurality of scanning lines;~~
- ~~———— a plurality of data lines;~~
- ~~———— a plurality of pixel circuits including a plurality of electro-optical elements provided to correspond to intersections of the plurality of scanning lines and the plurality of data lines;~~
- ~~———— a data line driving circuit to supply a data voltage through the data line to each of the pixel circuits;~~
- ~~———— first switches that are part of a precharge circuit to control the supply of a precharge signal from a precharge signal supply line connected to at least one data line of the plurality of data lines to the at least one data line, the precharge signal being less than a data voltage;~~
- ~~———— second switches connected to the at least one data line of the plurality of data lines to control the output of a detection signal from the at least one data line to test lines, the detection signal being used for testing whether a sufficient data voltage has been written in the pixel circuits; and~~
- ~~———— a data line selection circuit to set the on or off state of the second switches,~~
- ~~———— each of the test lines being shared with a corresponding precharge supply line to form a shared line that extends at least from a connection with the at least one data line at the first and second switches along one line toward a precharge signal generating circuit and an output of the detection signal.~~

a plurality of pixel circuits comprising:

a first color pixel circuit having a first organic electroluminescent element emitting a first color,

a second color pixel circuit having a second organic electroluminescent element emitting a second color,

a third color pixel circuit having a second organic electroluminescent element emitting a third color,

a plurality of data lines comprising:

a first color data line connected to the first color pixel circuit,

a second color data line connected to the second color pixel circuit,

a third color data line connected to the third color pixel circuit,

a plurality of test and precharge lines comprising:

a first color test and precharge line connected to the first color data line,

a second color test and precharge line connected to the second color data line,

a third color test and precharge line connected to the third color data line,

a plurality of precharge voltage generating circuits comprising:

a first color precharge voltage generating circuit supplying a precharge voltage to the first color data line via the first color test and precharge line,

a second color precharge voltage generating circuit supplying a precharge voltage to the second color data line via the second color test and precharge line,

a third color precharge voltage generating circuit supplying a precharge voltage to the third color data line via the third color test and precharge line,

a test and precharge circuit supplying the precharge voltage to the plurality of data lines, as well as reading test signal from the plurality of data lines, comprising:

_____ a first color switch controlling a supply of the precharge voltage from the first color test and precharge line to the first color data line and output of the test signal from the first color data line to the first precharge line,

_____ a second color switch controlling a supply of the precharge voltage from the second color test and precharge line to the second color data line and output of the test signal from the second color data line to the second color test and precharge line,

_____ a third color switch controlling a supply of the precharge voltage from the third color test and precharge line to the third color data line and output of the test signal from the third color data line to the third precharge line,

_____ a shift register comprising a plurality of latch circuits,

_____ wherein,

_____ each of the latch circuits is provided corresponding to the first color switch, the second color switch and the third color switch,

_____ the first color switch, the second color switch and the third color switch are controlled by a signal output from the corresponding latch circuit.

2. (Currently Amended) ~~An electro-optical device,~~ An organic electroluminescent display comprising:

~~_____ a plurality of scanning lines;~~

~~_____ a plurality of data lines;~~

~~_____ a plurality of pixel circuits including a plurality of electro-optical elements provided to correspond to intersections of the plurality of scanning lines and the plurality of data lines;~~

~~_____ a data line driving circuit to supply a data voltage through the data line to each of the pixel circuits;~~

~~_____ first switches that are part of a precharge circuit to control the supply of precharge signals from input and output signal lines connected to at least one data line of the plurality of data lines to the at least one data line and to control the output of a test signal from the at least one data line to the input and output signal lines, the precharge signal being less than a data voltage; and~~

~~_____ a data line selection circuit to set the on or off state of the first switches, a test line for the test signal being shared with the input and output signal lines to form a shared line that extends at least from a connection with the at least one data line at the first switches along one line toward a precharge signal generating circuit and an output of the test signal.~~

a plurality of pixel circuits comprising:

_____ a first color pixel circuit having a first organic electroluminescent element emitting a first color,

_____ a second color pixel circuit having a second organic electroluminescent element emitting a second color,

_____ a third color pixel circuit having a second organic electroluminescent element emitting a third color,

_____ a plurality of data lines comprising:

_____ a first color data line connected to the first color pixel circuit,

_____ a second color data line connected to the second color pixel circuit,

_____ a third color data line connected to the third color pixel circuit,

_____ a plurality of test and precharge lines comprising:

_____ a first color input and output line connected to the first color data line,

_____ a second color input and output line connected to the second color data line,

_____ a third color input and output line connected to the third color data line,

_____ a plurality of precharge voltage generating circuits comprising:

_____ a first color precharge voltage generating circuit supplying a precharge voltage to the first color data line via the first color input and output line,

_____ a second color precharge voltage generating circuit supplying a precharge voltage to the second color data line via the second color input and output line,

_____ a third color precharge voltage generating circuit supplying a precharge voltage to the third color data line via the third color input and output line,

_____ a test and precharge circuit supplying the precharge voltage to the plurality of data lines, as well as reading test signal from the plurality of data lines, comprising:

_____ a first color switch controlling a supply of the precharge voltage from the first color input and output line to the first color data line and output of the test signal from the first color data line to the first precharge line,

_____ a second color switch controlling a supply of the precharge voltage from the second color input and output line to the second color data line and output of the test signal from the second color data line to the second color test and precharge line,

_____ a third color switch controlling a supply of the precharge voltage from the third color input and output line to the third color data line and output of the test signal from the third color data line to the third precharge line,

_____ a shift register comprising a plurality of latch circuits,

_____ wherein,

_____ each of the latch circuits is provided corresponding to the first color switch, the second color switch and the third color switch,

_____ the first color switch, the second color switch and the third color switch are controlled by a signal output from the corresponding latch circuit.

3. (Currently Amended) ~~An electro-optical device, An organic~~
electroluminescent display comprising:

- ~~_____ a plurality of scanning lines;~~
- ~~_____ a plurality of data lines;~~
- ~~_____ a plurality of pixel circuits including a plurality of electro-optical elements~~
provided to correspond to intersections of the plurality of scanning lines and the plurality of
data lines;
- ~~_____ at least two precharge lines to supply precharge signals to at least two data~~
lines of the plurality of data lines;
- ~~_____ a data line driving circuit to supply a data voltage through the data line to each~~
of the pixel circuits;
- ~~_____ first switches that are part of a precharge circuit to control the output of the~~
precharge signals from the at least two precharge lines to the at least two data lines, each
precharge signal being less than a data voltage; and
- ~~_____ second switches to control the output of detection signals from the at least two~~
data lines of the plurality of data lines to test lines, the detection signal being used for testing
whether a sufficient data voltage has been written in the pixel circuits, each of the test lines
being shared with a corresponding precharge supply line to form a shared line that extends at
least from a connection with the at least one data line at the first and second switches along
one line toward a precharge signal generating circuit and an output of the detection signal.

a plurality of pixel circuits comprising:

- ~~_____ a first color pixel circuit having a first organic electroluminescent element~~
emitting a first color,
- ~~_____ a second color pixel circuit having a second organic electroluminescent~~
element emitting a second color,

a third color pixel circuit having a second organic electroluminescent element emitting a third color,

a plurality of data lines comprising:

a first color data line connected to the first color pixel circuit,

a second color data line connected to the second color pixel circuit,

a third color data line connected to the third color pixel circuit,

a plurality of test and precharge lines comprising:

at least two first color test and precharge lines connected to at least two of the first color data lines,

at least two second color test and precharge lines connected to at least two of the second color data lines,

at least two third color test and precharge lines connected to at least two of the third color data lines,

a plurality of precharge voltage generating circuits comprising:

a first color precharge voltage generating circuit supplying a precharge voltage to the at least two first color data lines via the at least two first color test and precharge lines,

a second color precharge voltage generating circuit supplying a precharge voltage to the at least two second color data lines via the at least two second color test and precharge lines,

a third color precharge voltage generating circuit supplying a precharge voltage to the at least two third color data lines via the at least two third color test and precharge lines,

a test and precharge circuit supplying the precharge voltage to the plurality of data lines, as well as reading test signal from the plurality of data lines, comprising:

_____ a first color switch controlling a supply of the precharge voltage from the at least two first color test and precharge lines to the at least two first color data lines and output of the test signal from the at least two first color data lines to the at least two first precharge lines,

_____ a second color switch controlling a supply of the precharge voltage from the at least two second color test and precharge lines to the at least two second color data lines and output of the test signal from the at least two second color data lines to the at least two second color test and precharge lines,

_____ a third color switch controlling a supply of the precharge voltage from the at least two third color test and precharge lines to the at least two third color data lines and output of the test signal from the at least two third color data lines to the at least two third precharge lines,

_____ a shift register comprising a plurality of latch circuits,

_____ wherein,

_____ each of the latch circuits is provided corresponding to the first color switch, the second color switch and the third color switch,

_____ the first color switch, the second color switch and the third color switch are controlled by a signal output from the corresponding latch circuit.

4. (Currently Amended) ~~An electro-optical device~~ The organic electroluminescent display according to Claim 3, further comprising:

a data line selection circuit to control precharge signals output from the at least two data lines to the test lines by sequentially operating the second switches.

5. (Currently Amended) A method of driving an organic electroluminescent display ~~an electro-optical device~~, including:

~~_____ a plurality of scanning lines;~~

~~_____ a plurality of data lines wired to intersect the scanning lines;~~

~~_____ a plurality of pixel circuits including electronic circuits provided to correspond to intersections of the scanning lines and the data lines;~~

~~_____ a data line driving circuit to supply a data voltage through the data line to each of the pixel circuits;~~

~~_____ first switches that are part of a precharge circuit to control the supply of a precharge signal from a precharge signal supply line connected to at least one data line of the plurality of data lines to the at least one data line, the precharge signal being less than a data voltage; and~~

~~_____ second switches connected to the at least one data line of the plurality of data lines to control the output of a detection signal from the at least one data line to test lines, the detection signal being used for testing whether a sufficient data voltage has been written in the pixel circuit, each of the test lines being shared with a corresponding precharge supply line to form a shared line that extends at least from a connection with the at least one data line at the first and second switches along one line toward a precharge signal generating circuit and an output of the detection signal,~~

a plurality of pixel circuits comprising:

_____ a first color pixel circuit having a first organic electroluminescent element emitting a first color,

_____ a second color pixel circuit having a second organic electroluminescent element emitting a second color,

_____ a third color pixel circuit having a second organic electroluminescent element emitting a third color,

_____ a plurality of data lines comprising:

_____ a first color data line connected to the first color pixel circuit,

_____ a second color data line connected to the second color pixel circuit,

_____ a third color data line connected to the third color pixel circuit,

_____ a plurality of test and precharge lines comprising:

_____ a first color test and precharge line connected to the first color data line,

_____ a second color test and precharge line connected to the second color data line,

_____ a third color test and precharge line connected to the third color data line,

_____ a plurality of precharge voltage generating circuits comprising:

_____ a first color precharge voltage generating circuit supplying a precharge voltage
to the first color data line via the first color test and precharge line,

_____ a second color precharge voltage generating circuit supplying a precharge
voltage to the second color data line via the second color test and precharge line,

_____ a third color precharge voltage generating circuit supplying a precharge
voltage to the third color data line via the third color test and precharge line,

_____ a test and precharge circuit supplying the precharge voltage to the plurality of data
lines, as well as reading test signal from the plurality of data lines, comprising:

_____ a first color switch controlling a supply of the precharge voltage from the first color
test and precharge line to the first color data line and output of the test signal from the first
color data line to the first precharge line,

_____ a second color switch controlling a supply of the precharge voltage from the second
color test and precharge line to the second color data line and output of the test signal from
the second color data line to the second color test and precharge line,

_____ a third color switch controlling a supply of the precharge voltage from the third color
test and precharge line to the third color data line and output of the test signal from the third
color data line to the third precharge line,

_____ a shift register comprising a plurality of latch circuits,

_____ wherein,

each of the latch circuits is provided corresponding to the first color switch, the second color switch and the third color switch,

the first color switch, the second color switch and the third color switch are controlled by a signal output from the corresponding latch circuit.

the method comprising:

supplying a precharge signal from a precharge signal supply line to the data lines through the first switches when one of the plurality of scanning lines is selected;

supplying data signals to electronic circuits connected to the selected scanning line through the data lines;

outputting data signals supplied to the data lines as detection signals to test lines through the second switches; and

using the detection signals for testing whether a sufficient data voltage has been written in the pixel circuit.

6. (Currently Amended) A method of driving ~~an electro-optical device, an~~ organic electroluminescent display including:

~~a plurality of scanning lines;~~

~~a plurality of data lines wired to intersect the scanning lines;~~

~~a plurality of pixel circuits including electronic circuits provided to correspond to intersections of the scanning lines and the data lines;~~

~~at least two precharge lines to supply precharge signals to at least two data lines of the plurality of data lines;~~

~~a data line driving circuit to supply a data voltage through the data line to each of the pixel circuits;~~

~~first switches that are part of a precharge circuit to control the output of the precharge signals from the at least two precharge lines to the at least two data lines, each precharge signal being less than a data voltage; and~~

~~second switches to control the output of detection signals from the at least two data lines of the plurality of data lines to test lines, the detection signal being used for testing whether a sufficient data voltage has been written in the pixel circuit, each of the test lines being shared with a corresponding precharge supply line to form a shared line that extends at least from a connection with the data line at the first and second switches along one line toward a precharge signal generating circuit and an output of the detection signal,~~

a plurality of pixel circuits comprising:

a first color pixel circuit having a first organic electroluminescent element emitting a first color,

a second color pixel circuit having a second organic electroluminescent element emitting a second color,

a third color pixel circuit having a second organic electroluminescent element emitting a third color,

a plurality of data lines comprising:

a first color data line connected to the first color pixel circuit,

a second color data line connected to the second color pixel circuit,

a third color data line connected to the third color pixel circuit,

a plurality of test and precharge lines comprising:

at least two first color test and precharge lines connected to at least two of the first color data lines,

at least two second color test and precharge lines connected to at least two of the second color data lines,

at least two third color test and precharge lines connected to at least two of the third color data lines,

a plurality of precharge voltage generating circuits comprising:

a first color precharge voltage generating circuit supplying a precharge voltage to the at least two first color data lines via the at least two first color test and precharge lines,

a second color precharge voltage generating circuit supplying a precharge voltage to the at least two second color data lines via the at least two second color test and precharge lines,

a third color precharge voltage generating circuit supplying a precharge voltage to the at least two third color data lines via the at least two third color test and precharge lines,

a test and precharge circuit supplying the precharge voltage to the plurality of data lines, as well as reading test signal from the plurality of data lines, comprising:

a first color switch controlling a supply of the precharge voltage from the at least two first color test and precharge lines to the at least two first color data lines and output of the test signal from the at least two first color data lines to the at least two first precharge lines,

a second color switch controlling a supply of the precharge voltage from the at least two second color test and precharge lines to the at least two second color data lines and output of the test signal from the at least two second color data lines to the at least two second color test and precharge lines,

a third color switch controlling a supply of the precharge voltage from the at least two third color test and precharge lines to the at least two third color data lines and output of the test signal from the at least two third color data lines to the at least two third precharge lines,

a shift register comprising a plurality of latch circuits,

wherein,

each of the latch circuits is provided corresponding to the first color switch, the second color switch and the third color switch,

the first color switch, the second color switch and the third color switch are controlled by a signal output from the corresponding latch circuit,

the method comprising:

supplying a precharge signal from a precharge signal supply line to the data lines through the first switches when one of the plurality of scanning lines is selected;

supplying data signals to electronic circuits connected to the selected scanning line through the data lines;

outputting data signals supplied to the data lines as detection signals to the test lines through the second switches; and

using the detection signals for testing whether a sufficient data voltage has been written in the pixel circuit.

7. (Currently Amended) An electronic apparatus equipped with the ~~electro-optical device~~ organic electroluminescent display according to Claim 1.

8. (Canceled).

9. (Currently Amended) ~~An electro-optical device~~ The organic electroluminescent display of claim 1, the first switches control the supply of at least three precharge signals, one each selected for red, green, and blue pixel circuits.

10. (Canceled).

11. (Currently Amended) ~~An electro-optical device~~ The organic electroluminescent display of claim 2, the first switches control the supply of at least three precharge signals, one each selected for red, green, and blue pixel ~~circuits~~ circuits.

12. (Currently Amended) ~~An electro-optical device~~ The organic electroluminescent display of claim 3, the test lines are shared with the at least two precharge lines.

13. (Currently Amended) ~~An electro-optical device~~ The organic electroluminescent display of claim 3, the first switches control the supply of at least three precharge signals, one each selected for red, green, and blue pixel circuits.

14. (Canceled).

15. (Currently Amended) ~~A~~ The method of claim 5, the first switches control the supply of at least three precharge signals, one each selected for red, green, and blue pixel circuits.

16. (Canceled)

17. (Currently Amended) ~~A~~ The method of claim 6, the first switches control the supply of at least three precharge signals, one each selected for red, green, and blue pixel circuits.

18. (Currently Amended) ~~The electro-optical device~~ The organic electroluminescent display according to claim 1, wherein each shared line extends from at least the connection with the at least one data line at the first and second switches along one line to third switches, wherein the third switches control the supply of the precharge signal from the precharge signal-generating circuit to the shared line, and control the output of the detection signal.

19. (Currently Amended) ~~The electro-optical device~~ The organic electroluminescent display according to claim 2, wherein each shared line extends from at least the connection with the at least one data line at the first switches along one line to second switches, wherein the second switches control the supply of the precharge signals

from a precharge signal-generating circuit to the shared line, and control an output of the test signal.

20. (Currently Amended) ~~The electro-optical device~~ The organic electroluminescent display according to claim 3, wherein each shared line extends from at least the connection with the at least one data line at the first and second switches along one line to third switches, wherein the third switches control the supply of the precharge signal from the precharge signal-generating circuit to the shared line, and control the output of the detection signal.

21. (Previously Presented) The method according to claim 5, wherein each shared line extends from at least the connection with the at least one data line at the first and second switches along one line to third switches, wherein the third switches control the supply of the precharge signal from the precharge signal-generating circuit to the shared line, and control the output of the detection signal.

22. (Previously Presented) The method according to claim 6, wherein each shared line extends from at least the connection with the at least one data line at the first and second switches along one line to third switches, wherein the third switches control the supply of the precharge signal from the precharge signal-generating circuit to the shared line, and control the output of the detection signal.